Dataset Expocode	**35AQ20140318**
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Dataset	**Funding Info:** European Project INTERREG IV/MARINEXUS, Conseil Général du Finistère (CG29), Region Bretagne (program ARED, project CHANNEL), INSU (program LEFE/CYBER, project CHANNEL). **Initial Submission (yyyymmdd):** 20160130 **Revised Submission (yyyymmdd):**
Campaign/Cruise	**Expocode:** 35AQ20140318 **Campaign/Cruise Name:** FerryBox Roscoff-Plymouth **Campaign/Cruise Info:** FerryBox Roscoff-Plymouth **Platform Type:** **CO2 Instrument Type:** Membrane-IR **Survey Type:** VOS line **Vessel Name:** Armorique **Vessel Owner:** Brittany Ferries **Vessel Code:** 35AQ
Coverage	**Start Date (yyyymmdd):** 20140318 **End Date (yyyymmdd):** 20141009 **Westernmost Longitude:** 6 W **Easternmost Longitude:** 2.5 W **Northernmost Latitude:** 50.5 N **Southernmost Latitude:** 48.5 N **Port of Call:** Roscoff **Port of Call:** Plymouth
Variable	**Name:** DATE **Unit:** dd/mm/yyyy hh:MM:ss **Description:** Date and Time
Variable	**Name:** LAT **Unit:** decimal dergree **Description:** Latitude
Variable	**Name:** LON **Unit:** decimal degree **Description:** Longitude
Variable	**Name:** SAL_FB

	Unit: psu **Description:** salinity
Variable	**Name:** TMP_FB **Unit:** degree celsius **Description:** SST
Variable	**Name:** pCO2 **Unit:** µatm **Description:** corrected partial pressure of CO2
Variable	**Name:** pCO2 DIC-TA **Unit:** µatm **Description:** pCO2 computed from discrete DIC/TA samplings
Variable	**Name:** DIC **Unit:** µmol kg-1 **Description:** Dissolved Inorganic Carbon concentration from discrete samplings
Variable	**Name:** TA **Unit:** µmol kg-1 **Description:** Total alkalinity concentration from discrete samplings
Sea Surface Temperature	**Location:** close to the seawater catching site at 4m depth **Manufacturer:** SeaBird **Model:** SBE38 **Accuracy:** 0.001 (°C if units not given) **Precision:** 0.001 (°C if units not given) **Calibration:** none **Comments:** The SST sensor was new at the beginning of the deployment and were replace by a spare one during winter 2013.
Sea Surface Salinity	**Location:** in a FerryBox few meter upper than the SST sensor **Manufacturer:** SeaBird **Model:** SBE45 **Accuracy:** 0.005 **Precision:** 0.001 **Calibration:** We used two SBE45 sensors calibrated using the SHOM (Service Hydrographique et Océanographique de la Marine) calibration facility were rotated in order to prevent sensor drift during the two-year deployment. **Comments:** In addition to the calibration performed by the SHOM, we performed in-situ discrete salinity samplings every month during the deployment and we obtained a mean difference of 0 between the salinity measured by the SBE45 and salinity from discrete samplings.
Atmospheric Pressure	**Location:** none **Normalized to Sea Level:** yes **Manufacturer:** none **Model:** none **Accuracy:** none (hPa if units not given) **Precision:** none (hPa if units not given) **Calibration:** none **Comments:** none
Atmospheric CO2	**Measured/Frequency:** none **Intake Location:** none **Drying Method:**

Atmospheric CO2 Accuracy: none
Atmospheric CO2 Precision: none

Aqueous CO2 Equilibrator Design

System Manufacturer: CONTROS HydroC/CO2 FT pCO2
Intake Depth: 4
Intake Location: engine room level in front of the ferry
Equilibration Type: membrane equilibration
Equilibrator Volume (L): none
Headspace Gas Flow Rate (ml/min): none
Equilibrator Water Flow Rate (L/min): 5
Equilibrator Vented: No
Equilibration Comments:
Drying Method: none

Aqueous CO2 Sensor Details

Measurement Method: Contros HydroC/CO2 FT pCO2
Method details: The FerryBox, which hosts the pCO2 sensor, was wash by an acid solution approximatelly twice a day (when the ferry arrive inharbor and the FerryBox stops) to avoid fouling.
Manufacturer: Contros
Model: HydroC/CO2 FT pCO2
Measured CO2 Values: xCO2(dry) and pCO2(dry)
Measurement Frequency: 60s
Aqueous CO2 Accuracy: pCO2 0um after drift correction
Aqueous CO2 Precision: pCO2 +/- 6um
Sensor Calibrations: sensor calibration by manufacturer every year during winter by sending them the sensor. Correction of pCO2 with the value of the automatic zeroing pCO2 value. Correction with discrete pCO2 measurement from DIC/TA samplings (aprox. 15 samplings/month). No post-calibration. More details in the pdf in supplemental material.
Calibration of Calibration Gases: none
Number Non-Zero Gas Standards:
Calibration Gases:
none
Comparison to Other CO2 Analyses:
Comments: In 2012 we did not have access to the values of the zeroings, we only corrected pCO2 values using discrete pCO2 values computing from bimonthly DIC/TA samplings (Marrec et al., Journal of Marine Systems, 2014). In 2013 and 2014 we had access to the zero values to perform a first correction on the raw pCO2 data of the sensor (see supplemental document).
Method Reference:
Marrec, P., Cariou, T., Latimier, M., Macé, E., Morin, P., Vernet, M., and Bozec, Y.: Spatio-temporal dynamics of biogeochemical processes and air–sea CO2 fluxes in theWestern English Channel based on two years of FerryBox deployment, J. Marine Syst., doi:10.1016/j.jmarsys.2014.05.010, 2014.

Equilibrator Temperature Sensor

Location: none
Manufacturer: none
Model: none
Accuracy: 0 (°C if units not given)
Precision: 0 (°C if units not given)
Calibration: none
Comments: none

Equilibrator Pressure Sensor	**Location:** none **Manufacturer:** none **Model:** none **Accuracy:** 0 (hPa if units not given) **Precision:** 0 (hPa if units not given) **Calibration:** none **Comments:** none
Additional Information	**Suggested QC flag from Data Provider:** NE **Additional Comments:** **Citation for this Dataset:** Marrec, P., Cariou, T., Latimier, M., Macé, E., Morin, P., Vernet, M., and Bozec, Y.: Spatio-temporal dynamics of biogeochemical processes and air–sea CO2 fluxes in the Western English Channel based on two years of FerryBox deployment, J. Marine Syst., doi:10.1016/j.jmarsys.2014.05.010, 2014. **Other References for this Dataset:** Marrec, P., Cariou, T., Latimier, M., Macé, E., Morin, P., Vernet, M., and Bozec, Y.: Spatio-temporal dynamics of biogeochemical processes and air–sea CO2 fluxes in the Western English Channel based on two years of FerryBox deployment, J. Marine Syst., doi:10.1016/j.jmarsys.2014.05.010, 2014.